Claims

1. A device for force transmission by means of mechanical interaction, having

- a plurality of supports (11) for receiving or disposing one or more springs, shock absorbers, or magnets;

- at least one axle, on which the supports are rotatably disposed by means of bearing means;

- one or more freewheel means (19), in particular freewheel bearings, which act between the individual supports (11) and the at least one axle, so that the supports (11) that carry the spring, shock absorber or magnets (15) are rotatable in only one direction of motion (20) either about an axis of rotation (15);

- springs, shock absorbers or magnets disposed on the supports, which are each oriented in the direction of motion of the support; and

- an arrangement of adjacent supports such that the springs, shock absorbers or magnets disposed on the supports can cooperate with one another for the sake of transmitting pulses to one another,

characterized in that

the supports are each rotatably disposed on their own independent axle.

2. The device as recited in claim 1, characterized in that for forming a pulse transmitting element, two supports (11) each, spaced apart from one another, are disposed on a common axle in a manner fixed against relative rotation.

3. The device as recited in claim 1 or 2, characterized in that a plurality of such pulse transmitting elements are provided, which are disposed coaxially and spaced apart from one another along a common axis of rotation such that the springs, shock absorbers or magnets of one element can cooperate at least with those of an adjacent element.

4. The device as recited in one of claims 1 through 3, characterized in that the axle of the support (11) or of the element (12), each rotatably disposed on a stationary frame (49, 50), and the freewheel means (19) are solidly joined to the frame (49, 50), so that the support (11) or the element (12) is rotatable in only one direction of rotation.

5. The device as recited in one of claims 1 through 4, characterized in that as the support (11), at least one ring or disk is provided, and a plurality of such supports (11a, 11b, 11c, etc.) is disposed on a common axis of rotation (15) and spaced apart from one another in the form of a stack or a row with one another, so that a starting pulse, transmitted from an external pulse transducer to the first support (11_1) of the stack is transmitted to the last support (11_n) of the stack.

6. The device as recited in one of claims 1 through 5, characterized in that the supports (11) are freely rotatably supported by means of a plurality of bearings (17) resting
outside on the periphery; and that on the inside of the ring a toothing (27) is provided, with which a gear wheel (23), held by a freewheel bearing (19), meshes.

7. The device as recited in one of claims 1 through 6, characterized in that the common axis of rotation of the supports corresponds to a straight line (15) or a curved path, preferably a circular path (49).

8. The device as recited in one of claims 1 through 7, characterized in that as the support (11) for the spring means (15), a circular disk, ring, split ring, or the like is provided, and a plurality of such disks is disposed rotatably in only one direction of rotation (53) in a common plane, spaced apart from one another by means of one or more corresponding bearings, so that a starting rotation pulse transmitted from an external pulse transducer to the first disk is transmitted onward as far as the last disk in the disk arrangement.

9. The device as recited in one of claims 1 through 8, characterized in that one or more first gear wheels (67) are disposed on one or more axles (45) in a manner fixed against relative rotation; that spaced from the axis of rotation (52) of the axles (45), at least one second axle (71), with second gear wheels (69) disposed on it with backstops (51), is provided, which second gear wheels (69) can be brought into engagement with

the first gear wheels (67) directly, or by means of a drive chain, belt, toothed belt, or the like.

10. The device as recited in one of claims 1 through 9, characterized in that means are provided for blocking or
locking at least one element in a defined rotary position.

11. The device as recited in one of claims 1 through 18, characterized in that the locking or blocking means are formed by a locking bar, gear wheel, clutch or the like and can cooperate, preferably by positive engagement, with at least one element, preferably the second or third or fourth element, and so forth, of a device.

12. The device as recited in claim 11, characterized in that each support (11) is equipped with at least one spring (15), and preferably with two springs (15) spaced apart from one another.

13. The device as recited in one of claims 1 through 12, characterized in that the bearing means are ball bearings, freewheel bearings, slide bearings, air bearings, or combinations of freewheel bearings and ball bearings.

14. The device as recited in one of claims 1 through 13, characterized in that additional inertial parts, such as flywheels, are disposed on the supports, pinions, gear wheels, backstops or axles, for increasing the pulse energy that is capable of being stored by the device.

15. The device as recited in one of claims 1 through 14, characterized in that a mechanism is provided for adjusting the maximum compression and/or relief of the spring.

16. The device as recited in claim 15, characterized in that the adjusting mechanism is a frame disposed on the
spring, or a threaded pin with a nut, for limiting the maximum compression and/or relief of the spring.

17. The device as recited in one of claims 1 through 16, characterized in that the position and shape of the magnets on the individual supports is selected such that a

residual tension which is always > 0 is established between the magnets disposed on adjacent supports.

18. The device as recited in one of claims 1 through 16, characterized in that the position and shape or nature of the springs or shock absorbers on the individual supports is selected such that a residual tension which is always > 0 is established between the springs or shock absorbers disposed on the adjacent supports.

19. The device as recited in one of claims 1 through 18, characterized in that the gear wheels, pinions or the like cooperating with one another are disposed such that the energy of motion from the individual elements can be carried to the outside, and the pinions or gear wheels can continue running with or without flywheels.

20. The device as recited in claim 19, characterized in that additional backstops are provided on the inner, first gear wheels.

21. The device as recited in one of claims 1 through 20, characterized in that one or more first gear wheels (67) with backstops are disposed on one or more axles (45); that spaced apart from the axis of rotation (52) of the axles (45), at least one second axle (71) with second gear wheels
(69), disposed thereon in a manner fixed against relative rotation, or second gear wheels (69) with backstops (51), disposed thereon, is provided, which second gear wheels (69) can be made to mesh with the first gear wheels (67) directly, or by means of a drive chain, belt, toothed belt, or the like.

22. The device as recited in one of claims 1 through 21, characterized in that a controller is provided, for attaining a variable dynamic pulse behavior, by providing that the energy of motion is carried to the outside from only every other or every third or every fourth element, and so forth.